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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/621,576

07/18/2003

Cheol-Joon Yoo

2557-000157/US

2118

30593

7590

03/14/2006

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EXAMINER

SMOOT, STEPHEN W

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

3/1

<b>Office Action Summary</b>	Application No. 10/621,576	Applicant(s) YOO ET AL.	
	Examiner Stephen W. Smoot	Art Unit 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 November 2005.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☒ Claim(s) 1-13 is/are allowed.  
 6) ☒ Claim(s) 14-17 and 19-21 is/are rejected.  
 7) ☒ Claim(s) 18 and 22 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

This Office action is in response to applicant's amendment filed on 18 November 2005.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 14-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Garrett, Sr. et al. (US 4,285,433).

Referring to Figs. 1, 2 and column 3, line 64 to column 4, line 48, Garrett, Sr. et al. disclose an apparatus for removing semiconductor dice (16) from a bi-layer of tape (12, 14). The apparatus includes an adhesive tape (18) that is pulled across a surface (20) to convey a diced wafer (10) that is positioned thereon. The dice (16) are affixed to two layers of tape (12, 14) with one layer (12) adhered to the dice (16) and the other layer (14) adhered to the adhesive tape (18). The tape layers (12, 14, 18) are pulled

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over an edge (24) and through a slot (38), which causes the dice (16) to separate from the one layer of tape (12) because the other layer (14) and the adhesive layer (18) have greater adhesive strengths than the one layer (12). These are all of the limitations set forth in claim 14 of the applicant's invention.

Regarding claim 15, the adhesive tape (18) is pulled from a supply roll (22) across the surface (20), over the edge (24) and onto a take-up reel (26).

Regarding claim 16, the adhesive tape (18) is pulled with a crank (32) that is used to turn the take-up reel (26). The take-up reel (26) performs the functions of both a guide roller and a pressure roller.

Regarding claim 17, the entire diced wafer (10) is mounted on the adhesive tape (18), which functions as a carrier.

3. Claims 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Farnworth et al. (US 6,202,292 B1).

Referring to Figs. 1a, 1b and column 5, line 7 to column 6, line 7, Farnworth et al. disclose a frame (106) for supporting a carrier tape (104) that has a diced wafer (101) comprising singulated die (102a, 102b, etc.) mounted thereon. The frame (106) is connected to a base (110) of an apparatus (100). The apparatus (100) also includes a screen (112) positioned over a plate member (120) and a vacuum source (114) connected to the base (110) beneath the plate member (120). The vacuum source (114) is activated to provide suction through the screen (112), which causes the carrier

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tape (104) to pull away from the singulated die (102a, 102b, etc.). These are all of the limitations set forth in claims 19-21 of the applicant's invention.

***Allowable Subject Matter***

4. Claims 1-13 are allowed.
5. Claims 18, 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matter:
  - Claims 1-13 are allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a method of assembling a semiconductor package that includes the steps of attaching a protective tape to the active surface of a semiconductor wafer, sawing the semiconductor wafer to separate it into a plurality of individual chips while each individual chip remains covered by a portion of the protective tape, attaching an individual chip to a chip pad, and subsequently removing the portion of the protective tape from the individual chip;

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- Claim 18 would be allowable because the prior art of record does not teach or suggest, in combination with the other claim limitations, an apparatus for use in assembling a semiconductor package that includes a chip positioning device, a tape positioning device and a tape displacement device, wherein the chip positioning device is arranged and configured to hold a plurality of individual chips mounted on a frame, a leadframe, or a circuit board; and
- Claim 22 would be allowable because the prior art of record does not teach or suggest, in combination with the other claim limitations, an apparatus for use in assembling a semiconductor package that includes a chip positioning device and a tape removal device, wherein the chip positioning device is arranged and configured to hold a plurality of individual chips mounted on a frame, a leadframe, or a circuit board.

### ***Response to Arguments***

7. Applicant's arguments filed 18 November 2005 (see pages 8-9) have been fully considered but they are not persuasive.

In response to applicant's argument that Garrett, Sr. et al. (US 4,285,433) lack the claim limitation as set forth in claim 14 of "the individual chip including a protected upper surface having a protective tape portion arrayed thereon" and that Farnworth et al. (US 6,202,292 B1) lack the same limitation as set forth in claim 19, a recitation of the intended use of the claimed invention must result in a structural difference between the

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claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use (e.g. separating an individual chip from a corresponding protective tape portion as claimed by the applicant), then it meets the claim.

The applicant is again referred to MPEP section 2114, where it is stated that "apparatus claims must be structurally distinguishable from the prior art". The applicant is also referred to MPEP section 2115, where it is stated "material or article worked upon does not limit apparatus claims" (e.g. an individual chip including a protected upper surface having a protective tape portion arrayed thereon as claimed by the applicant).

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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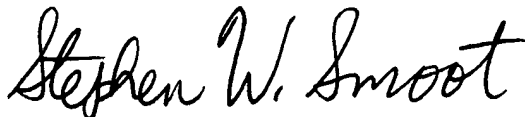
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen W. Smoot whose telephone number is 571-272-1698. The examiner can normally be reached on M-F (8:00 am to 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SWS

  
**STEPHEN W. SMOOT**  
**PRIMARY EXAMINER**